

Chemistry 2541, Fall 2017

Quiz 4

(30 points)

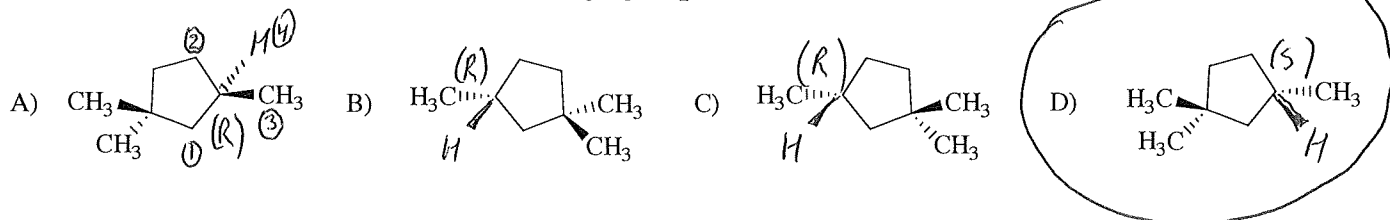
Key

Important notes:

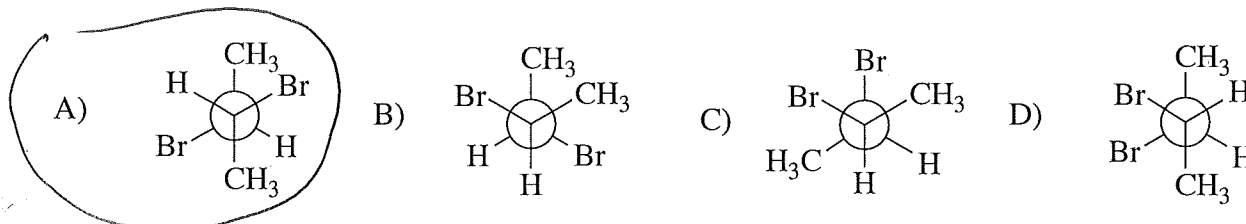
- Please use the provided Scantron form for your answers; you can keep the sheet with the questions and can use it as scratch paper
- Do not forget to write your name on the Scantron form
- You will not receive credit for unmarked answers or for more than one mark on answer line
- Your scores will be posted on eGradebook; graded Scantron forms will not be returned to students.

Questions 1-10: Please mark the appropriate box on the front of the Scantron form (3 pts each).

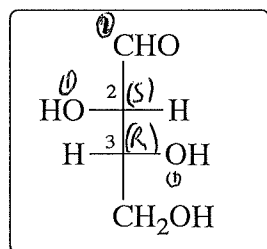
1. Which is the structure of (*S*)-1,1,3-trimethylcyclopentane?



2. Which one of following Newman projections represents a **meso** compound?



3. What is the **configuration** (*R* or *S*) at the carbon atoms 2 and 3 in the **Fischer projection** of a molecule shown in the box?



A) 2*R*,3*R*

B) 2*S*,3*R*

C) 2*R*,3*S*

D) 2*S*,3*S*

4. Consider the following **orders of priority** (highest to lowest). Which order is incorrect?

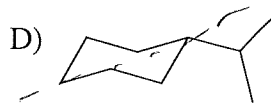
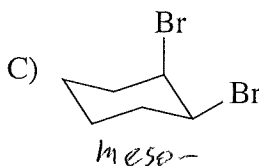
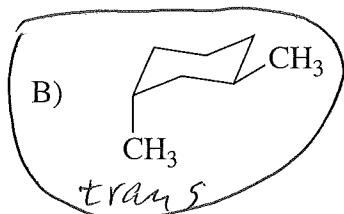
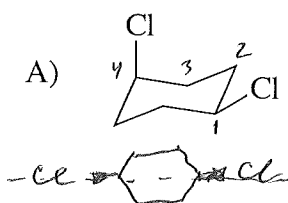
A) Cl > CH₂Br > CH₃ > H

B) Cl > CH=CH₂ > CH₃ > H

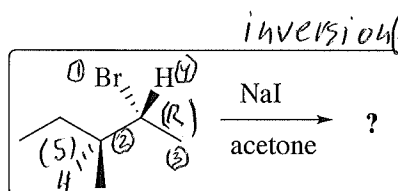
C) OH > CH₂CH₂OH > CHO > CH₃

D) NH₂ > CH₂SH > CH₂OH > CH₃

5. Which one of the following molecules is **chiral**?



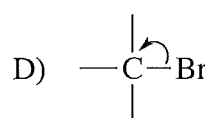
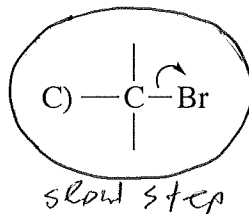
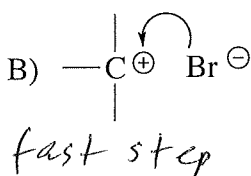
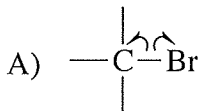
6. What is the IUPAC name of the major **product** for the reaction shown in the box?



A) (2*R*,3*S*)-2-~~bromo~~^{iodo}-3-methylpentane
 C) (2*R*,3*R*)-2-~~bromo~~^{iodo}-3-methylpentane

B) (2*S*,3*R*)-2-~~bromo~~^{iodo}-3-methylpentane
 D) (2*S*,3*S*)-2-~~bromo~~^{iodo}-3-methylpentane

7. Which best describes the **rate-limiting** step in the S_N1 mechanism?



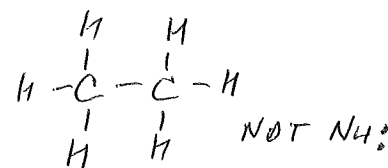
8. Which one of the following compounds is **not a nucleophile**?

A) water

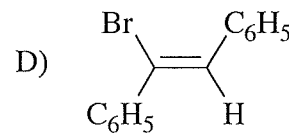
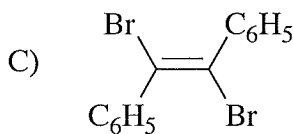
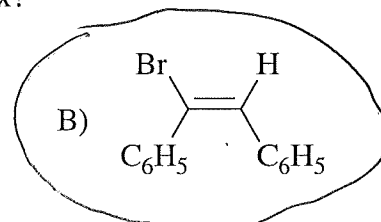
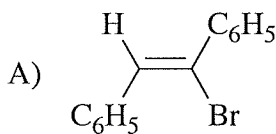
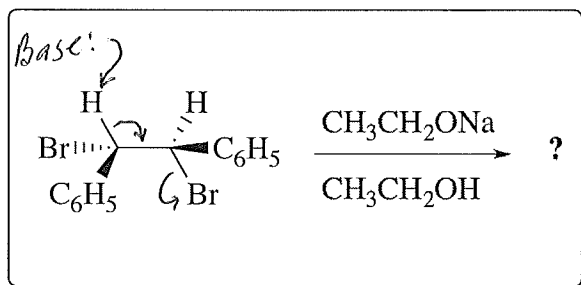
B) CH_3OH

C) C_2H_6

D) $(\text{CH}_3)_3\text{N}$



9. What is the main **product** of the **E2-elimination** reaction shown in the box?



10. Which one of the following compounds is the **best choice** as a **reagent** for an **E2** reaction?

A) $t\text{-BuOK}$

B) $\text{C}_2\text{H}_5\text{OCH}_3$

C) NaI

D) $t\text{-BuCl}$